

**Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, DC 20554**

In the Matter of)	
)	
Authorizing Permissive Use of the “Next)	GN Docket No. 16-142
Generation” Broadcast Television Standard)	

COMMENTS OF WI-FI ALLIANCE

Wi-Fi Alliance®^{1/} submits these comments in response to the Further Notice of Proposed Rulemaking in the above-referenced proceeding regarding the deployment of the Advanced Television System Commission’s new 3.0 standard (“ATSC 3.0”).^{2/} Wi-Fi Alliance appreciates the Commission’s commitment to fostering innovation and investment in the broadcast industry. However, the Commission must also remain committed to preserving its decisions that spectrum be available for unlicensed devices in the television broadcast band. It should therefore ensure that implementation of the ATSC 3.0 standard will not limit access to unlicensed use of television broadcast spectrum.

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^{2/} See *Authorizing Permissive Use of the “Next Generation” Broadcast Television Standard*, Further Notice of Proposed Rulemaking, FCC 17-158, GN Docket No. 16-142 (2017) (“FNPRM”).

I. INTRODUCTION

Wi-Fi Alliance is a global, non-profit industry association of over 800 leading companies from dozens of countries devoted to connecting everyone and everything everywhere. With technology development, market building, and regulatory programs, Wi-Fi Alliance has enabled widespread adoption of Wi-Fi® worldwide, certifying thousands of Wi-Fi products each year. Certified, interoperable Wi-Fi systems are critical to the Nation's wireless ecosystem, key components of the country's economic growth and catalysts for technological innovation. The mission of Wi-Fi Alliance is to provide a highly effective collaboration forum for Wi-Fi matters, grow the Wi-Fi industry, lead industry growth with new technology specifications and programs, support industry-agreed standards, and deliver greater product connectivity through interoperability, testing, and certification.

As Wi-Fi Alliance has consistently advocated in the Commission's proceedings related to television white space ("TVWS") devices and the use of the 600 MHz band, access to spectrum for unlicensed operations in a variety of bands is important and the television bands in particular can be used to support Internet of Things and other applications.^{3/} But it is critical that the Commission provide access to a sufficient amount of spectrum for unlicensed devices in order to support a business case for development of technology in those bands.^{4/} Therefore, Wi-Fi

^{3/} Wi-Fi Alliance 600 MHz Comments, at 2.

^{4/} See, e.g., *Comments of Wi-Fi Alliance*, GN Docket No. 17-183, (filed Oct. 2, 2017) (advocating for additional unlicensed spectrum in the 6 GHz band); *Comments of Wi-Fi Alliance*, ET Docket No. 14-165; GN Docket No. 12-268, at 3 (Feb. 4, 2015) ("*Wi-Fi Alliance 600 MHz Comments*") (commenting that additional unlicensed spectrum must be made available and usable by unlicensed devices); *Comments of Wi-Fi Alliance*, GN Docket No. 12-268, at 3 (Jan. 8, 2013) (commenting that it is "critically important that the Commission place a high priority on the expansion of available unlicensed spectrum").

Alliance has asked the Commission to ensure that this spectrum be available for unlicensed use as part of its planning for the deployment of ATSC 3.0.^{5/}

In the *Incentive Auction Report and Order* the Commission, responsive to requests from Wi-Fi Alliance and others, permitted unlicensed operations in the television bands, 600 MHz guard bands, and in channel 37.^{6/} And, in a pending proceeding, the Commission has proposed to preserve a vacant channel in the UHF band for white space devices.^{7/} This proceeding should not reverse those important actions and *reduce* access to television band spectrum for white space devices, by permitting the use of vacant channels for ATSC 1.0 or 3.0 transmissions. TVWS devices must continue to have access to broadcast television spectrum. To do otherwise would undermine the Commission’s decision “to create certainty for the unlicensed industry” and promote “greater innovation in new devices and services, including increased access for broadband services across the country” to be realized.^{8/}

II. ALLOWING TV BROADCASTS ON VACANT CHANNELS WILL UNDERMINE THE POTENTIAL OF TVWS

The *FNPRM* seeks comment on whether the Commission should permit broadcasters to use television channels that remain vacant after the incentive auction to serve as temporary host facilities for ATSC 1.0 or ATSC 3.0 programming.^{9/} This follows nearly the same request for

^{5/} *Comments of Wi-Fi Alliance*, GN Docket No. 16-142 (filed May 9, 2017).

^{6/} *See Expanding the Economic and Innovation Opportunities of Spectrum Through Incentive Auctions*, Report and Order, 29 FCC Rcd. 6567 ¶¶ 264-68 (2014) (“Incentive Auction Report and Order”).

^{7/} Amendment of Parts 15, 73 and 74 of the Commission’s Rules to Provide for the Preservation of One Vacant Channel in the UHF Television Band for Use by White Space Devices and Wireless Microphones, Notice of Proposed Rulemaking, 30 FCC Rcd. 6711 (2015) (“TVWS Vacant Channel NPRM”).

^{8/} *See* Incentive Auction Report and Order ¶ 264.

^{9/} *See FNPRM*, ¶ 14.

comment in the NPRM in this proceeding.^{10/} Wi-Fi Alliance strongly opposes this proposal now, as it did earlier.

All metrics point to an explosion in demand for the capacity of our wireless ecosystem.^{11/} In order to help meet some of that demand, the FCC has consistently identified developing innovative spectrum management tools as being among its top priorities.^{12/} The TVWS service, which utilizes device geolocation databases to determine what spectrum can be used where, is exactly the type of innovation that will help meet these spectrum demands. In fact, with the proposed rule changes to the 3.5 GHz “Citizens Broadband Radio Service” band,^{13/} it may be the best chance for such an innovative experiment in spectrum management available to the Commission.

If the Commission is serious about using spectrum management systems to more efficiently utilize scarce spectrum, rather than continuing to rely almost exclusively on the use of licensed spectrum, it must protect and foster the development of the TVWS service. Any

^{10/} See Authorizing Permissive Use of the “Next Generation” Broadcast Television Standard, Further Notice of Proposed Rulemaking, 32 FCC Rcd 1670 ¶ 14 (2017) (“NPRM”)

^{11/} See, e.g., Wi-Fi Alliance, *Spectrum Needs Study* at 23, Feb. 2017, available at <https://www.wi-fi.org/downloads-registered-guest/Wi-Fi%2BSpectrum%2BNeeds%2BStudy0.pdf/33364> (Showing that up to 1500 megahertz of additional unlicensed spectrum will be needed by 2025 to avoid performance-reducing spectrum shortages); CISCO, *VNI Complete Forecast Highlights Tool, North America, United States, Wired Wi-Fi and Mobile Growth* (2017), http://www.cisco.com/c/m/en_us/solutions/service-provider/vni-forecast-highlights.html (select “United States” from the “North America” drop-down menu, select “2021 Forecast Highlights” and expand “Wired Wi-Fi and Mobile Growth.”). CISCO expects Wi-Fi traffic to account for almost half of all Internet traffic by 2020. CISCO, *Cisco Visual Networking Index: Global Mobile Data Traffic Forecast Update, 2016–2021* at 21, Feb. 7, 2017, available at <https://www.cisco.com/c/en/us/solutions/collateral/service-provider/visual-networking-index-vni/mobile-white-paper-c11-520862.pdf>.

^{12/} See, e.g., Federal Communications, *Strategic Plan, 2015-2018*, p. 7 (“Increasing demand for spectrum requires new and innovative management techniques to allocate, assign, and use spectrum more efficiently and effectively.”).

^{13/} Promoting Investment in the 3550-3700 MHz Band; Petitions for Rulemaking Regarding the Citizens Broadband Radio Service, Notice of Proposed Rulemaking and Order Terminating Petitions, 32 FCC Rcd. 8071 (2017).

potential additional use of these innovative techniques, based on the TVWS experience will be undermined by continued uncertainty preventing large-scale investment in TVWS technology. This will rob the Commission, and the American people, of valuable information that may inform future efforts at spectrum sharing, reducing the benefits those spectrum management efforts could provide.

In addition to being a proving ground for much-needed spectrum sharing methods, the TVWS service holds immense potential for a number of important applications, including the Internet of Things^{14/} and the provision of fixed broadband to rural Americans – an important tool in closing the Digital Divide.^{15/} The latter is a longstanding priority of the Commission, and Chairman Pai has made clear it is his number one priority as Chairman.^{16/} The ability for TVWS spectrum to help realize this potential has been consistently hamstrung by regulatory uncertainty, first from the incentive auction and its resultant repacking, and now from the ATSC 3.0 deployment. It is therefore crucial that the Commission make the success of TVWS a priority by removing any regulatory uncertainty regarding its availability in order to allow operations using this spectrum to move forward. If the Commission allows access to TVWS to be preempted by any other regulatory initiative, it will forever doom the promise of TVWS technology and applications.

TVWS business plans will depend on reliable access to a sufficient amount of spectrum. But not only has the Commission allowed uncertainty to undermine that, there is a limited amount of spectrum available for unlicensed use in the television bands: the *Incentive Auction*

^{14/} Wired, *TV White Space will Connect the Internet of Things*, Feb. 13, 2015, available at <http://www.wired.co.uk/article/white-space-spectrum>.

^{15/} See, e.g., The New York Times, *To Close Digital Divide, Microsoft to Harness Unused Television Channels*, July 11, 2017.

^{16/} See, e.g., *Remarks of Ajit Pai, Chairman*, Federal Communications Commission, Jan. 24, 2017.

Report and Order anticipated that one television channel in every market would be available for shared use by TVWS devices,^{17/} though Wi-Fi Alliance and others have asked the Commission to preserve several channels.^{18/} Diverting the use of limited vacant channels for ATSC 3.0 implementation will exacerbate the likely scarcity of spectrum for unlicensed operations.

In the *TVWS Vacant Channel NPRM*, the Commission stated that prioritizing and protecting white space is critical to TVWS innovation.^{19/} Allowing broadcasters to use vacant channels will delay the deployment of TVWS technologies. Broadcasters that use the vacant channels will require licensing of those channels for broadcast use, which is not contemplated in the vacant channel proceeding.^{20/} Even worse, since there is no timeline for the end of the ATSC 3.0 deployment, these channels could remain occupied by TV broadcasts for years, perhaps a decade or more depending on the rates of adoption of ATSC 3.0 compatible technology. This indefinite delay in the availability of spectrum for unlicensed use may completely derail current investment in TVWS technologies and applications. Making vacant channels unavailable for TVWS use represents a massive and open-ended deviation from the carefully considered approach contemplated by the Commission in both of those proceedings. Accordingly, the Commission should decline to allow the use of vacant channels for TV broadcasts as part of the ATSC 3.0 transition.

^{17/} *Incentive Auction Report and Order*, ¶ 258 (explaining that the Commission will permit TVWS devices to operate on any unused television channel following the close of the incentive auction and that after public notice and comment, it will designate “one unused channel in the remaining television band in each area for shared use by wireless microphones and TVWS devices”).

^{18/} See, e.g., Letter from Paul Margie, Counsel to Microsoft Corporation, to Marlene H. Dortch, Secretary, Federal Communications Commission, ET Docket No. 14-165, Nov. 13, 2017; Letter from Harold Field, Senior VP, Public Knowledge to Marlene H. Dortch, Secretary, Federal Communications Commission, GN Docket No. 12-354 et. al, (Oct. 2, 2017); Comments of Wi-Fi Alliance, MB Docket No. 15-146 (filed Sept. 30, 2015).

^{19/} *TVWS Vacant Channel NPRM*, ¶ 4.

^{20/} See generally *TVWS Vacant Channel NPRM*.

III. ALLOWING TV BROADCASTERS TO USE VACANT CHANNELS IS A MASSIVE (AND UNMERITED) SPECTRUM GIVE-AWAY TO BROADCASTERS

The petition that initiated this proceeding stated explicitly that broadcasters are “not ask[ing] the Commission to give broadcasters additional spectrum to roll out Next Generation TV.”^{21/} Those supporting ATSC 3.0 deployment have consistently asserted that it will require minimal Commission action with only extremely small impacts on other industries.^{22/} The current after-the-fact proposal for more, free spectrum is completely contrary to that original intent and should be rejected.

Even if broadcasters planned to use this spectrum exclusively for TV broadcasting, this proposal would be unreasonable because of its potential for delaying or destroying the nascent TWVS industry. But at least some of the motivation behind ATSC 3.0 is its potential to allow broadcasters to use spectrum for mobile data connections.^{23/} The use of this spectrum for “datacasting” and other Over The Air (“OTA”) data solutions are a core component of ATSC 3.0 proposals, as reflected in broadcasters’ submissions in this proceeding,^{24/} and in other

^{21/} See, *Joint Petition for Rulemaking*, America’s Public Television Stations, AWARN Alliance, Consumer Technology Association, and National Association of Broadcasters, GN Docket No. 16-142 at 3 (filed Apr. 13, 2016) (“Petition”). See also, “No additional spectrum is required or requested;” (iii) and “without requiring any additional spectrum or government assistance” (iv).

^{22/} See, e.g., Letter from Rebecca Hanson, SVP, Strategy and Policy, Sinclair Broadcast Group to Marlene H. Dortch, Secretary, Federal Communications Commission, Feb. 17, 2017, GN Docket No. 16-142 (opposing the consideration of issues related to MVPDs in “this narrow technical proceeding.”); *Reply Comments of Pearl Mobile DTV Company*, GN Docket No. 16-142 at 6 (filed June 27, 2016) (opposing the consideration of broadcast public service obligations, rather than focusing the proceeding on the “narrow and straightforward request”, given that “broadcasters are not seeking new spectrum or government subsidies”).

^{23/} See, e.g., *Petition* at 3 (“enable broadcasters to bring innovative new services and new data pipes into the home and the community”); and 5 (“Enhanced datacasting to serve law enforcement...including the transmission of targeted video files”).

^{24/} See, e.g., ONE Media, LLC, Notice of *Ex Parte*, GN Docket No. 16-142, (filed Aug. 22, 2017) (noting in a Powerpoint presentation the use of ATSC 3.0 as part of 5G networks and listing as potential uses Internet of Things, eBooks, and Building Maintenance, among others); *Comments of TEGNA, Inc.*, GN Docket No. 16-142 at 2-3 (filed May 9, 2017) (“ATSC 3.0 enables enhanced mobile functionality that

promotional materials for the new standard.^{25/} Even the NPRM recognized that many of the uses of ATSC 3.0 would not relate to broadcasting, asking for comments on services that should be categorized as “ancillary” for purposes of its rules.^{26/}

That means that broadcasters are asking the Commission to give them free spectrum so that they can compete with wireless carriers who just paid nearly \$20 billion for nearly identical spectrum, more than \$10 billion of which went to broadcasters as part of the Incentive Auction.^{27/} Such a giveaway is contrary to over 20 years of Commission precedent and should be rejected.

IV. CONCLUSION

Wi-Fi Alliance appreciates the Commission’s efforts to facilitate the deployment of next generation technologies, but the ATSC 3.0 deployment should not be allowed to threaten the great potential for TVWS operations in the TV band. The Commission should not permit broadcasters to use vacant channels and instead preserve those for unlicensed operations.

delivers improved data to connected and autonomous vehicles...[and] enhanced datacasting to serve law enforcement, first responder, and emergency management organizations more efficiently.”); *Comments of ONE Media*, GN Docket No 16-142 (filed May 9, 2017) (“Broadcasters can use their ATSC 3.0 data pipes for multiple services”).

^{25/} See, e.g., ATSC 3.0, *ATSC 3.0 Broadcasts to Delivery Data to Connected and Autonomous Vehicles*, Newsletter, available at <https://www.atsc.org/newsletter/atsc-3-0-broadcasts-deliver-data-connected-autonomous-vehicles/>; Sinclair Broadcast Group, *Sinclair’s 3.0 Vision – The Future of Broadcasting*, Apr. 22, 2017 (“As the Next Gen ATSC 3.0 standard is deployed, broadcasters then can provide many of the service offerings previously limited to wireless carriers;” “Broadcasters will have the ability to expand their data delivery capabilities to much more than television programming and use the enormous data “pipe” to offer services to customers that have been tied by technology to platforms that offer only a one-to-one relationship;” and “The new architecture can provide both competition to wireless carriers and a complementary service integrated into their new 5G offerings.”)

^{26/} *NPRM* at ¶ 70.

^{27/} Incentive Auction Closing and Channel Reassignment, Public Notice, 32 FCC Rcd 2786 ¶ 2 (2017).

Respectfully submitted,

A handwritten signature in black ink, appearing to read 'Edgar Figueroa', with a long horizontal flourish extending to the right.

Edgar Figueroa
President and CEO

WI-FI ALLIANCE
10900-B Stonelake Blvd.
Suite 126
Austin, TX 78759
(512) 498-9434
efigueroa@wi-fi.org

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